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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Peter L. Rosefield

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12/16/2003

TOLER & LARSON & ABEL L.L.P.

PO BOX 29567

AUSTIN, TX 78755-9567

EXAMINER

SOWARD, IDA M

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 12/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/724,597

Applicant(s)

ROSEFIELD ET AL.

Examiner

Ida M Soward

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2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 14-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

This Office Action is in response to Applicants' amendment filed October 28, 2003.

### ***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a

nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 24 recites the limitation "**the first buffer**" in line 6. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art Figures 1-3 in view of Stearns et al. (5,895,967) and Kameda et al. (6,130,484).

In regard to claim 14, Admitted Prior Art Figures 1-3 teach an apparatus comprising: semiconductor substrate having an input output (I/O) ring, the I/O ring having a bond pad portion and an active buffer portion; the bond pad portion including: a first bond pad; a second set of bond pads having one or more bond pads; and a third bond

pad, wherein the second set of bond pads is immediately adjacent to the first and third bond pads. In regard to claims 15-16 and 18-23, Admitted Prior Art Figures 1-3 further teach the second set of bond pads including one or more bond pads (Admitted Prior Art Figure 2); a fixed voltage source being one of Vdd and Vss, power portion of a package substrate, power buffer, signal buffer being input, output and bi-directional buffers (page 1, lines 8-18). However, Admitted Prior Art Figures 1-3 fail to teach a conductive trace coupling the first bond pad to the third bond pad; a package substrate having a power portion; a first bond wire connected to the first bond pad and the power portion; a second bond wire connected to the third bond pad and the power portion, wherein one of the first bond pad and the third bond pad being connected to the active buffer portion of the I/O ring. In regard to claim 14, Stearns et al. teach a first conductive trace coupling the first bond pad 30 to the third bond pad; a second conductive trace coupling the first bond pad to a buffer 26; a third conductive trace coupling one of the bond pads of the second set of bond pads 28 to a buffer 26 (Figure 3, col. 5, lines 17-64). In regard to claim 17, Stearn et al. further teach a bond wire 46 connected to a bond pad and a power portion and a bond wire 44 connected to a bond pad and a power portion 26; and bond pads coupled to one another in a bond pad portion (Figure 4, cols. 6-7, lines 36-67 and 1-50). In regard to claim 24, Kameda et al. teaches a signal buffer 2 connected to 3b; a power buffer 2 connected to 7 immediately adjacent to the signal buffer; a bond pad 5 coupled to the power buffer; a bond pad 11b coupled to the signal buffer, wherein the bond pad 11b is immediately adjacent to a bond pad 5 and bond pad 11a (Figures 1-2, col. 3, lines 37-65). Since Admitted Prior Art Figures 1-3, Stearn et al. and Kameda

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et al. are from the same field of endeavor (bond pad semiconductor devices), the purpose disclosed by Kameda et al. would have been recognized in the pertinent art of Admitted Prior Art Figures 1-3 and Stearn et al. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the bond pad structure of Admitted Prior Art Figures 1-3 by incorporating the bond pad structures as taught by Stearn et al. and Kameda et al. to improve the reliability of the integrated circuit IC (col. 4, lines 24-33).

### ***Response to Arguments***

Applicant's arguments with respect to claims 14-25 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to semiconductor bond pad structures:

Huang et al. (US 6,319,750 B1)

Stearn et al. (US 6,477,046 B1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ida M Soward whose telephone number is 703-305-


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3308. The examiner can normally be reached on Monday - Thursday, 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 703-308-4905. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ims  
December 3, 2003

  
AMIR ZARABIAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800